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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,034	06/23/2003	KAI HSU	24.0833CIP	1033

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EXAMINER	
LE, TOAN M	

ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 12/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/604,034	HSU ET AL.	
	Examiner	Art Unit	
	Toan M Le	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 June 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 June 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6/23/03; 10/14/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Hsu (U.S. Patent No. 4,543,648).

Referring to claim 1, Hsu discloses a system for sonic logging of an earth formation (Abstract), comprising:

a logging instrument adapted for disposal within a well-bore traversing the formation (col. 4, lines 53-56);

at least one acoustic transmitter 26/28 (figure 1) disposed on the logging instrument (col. 4, lines 56-58);

at least one receiver 32 (figure 1) adapted to detect acoustic signals disposed on the logging instrument (col. 4, lines 58-60);

processor means adapted to process acoustic signals to determine a coherence measure from acoustic signals detected by the at least one receiver and associated with the at least one transmitter actuations (col. 8, lines 14-21; figure 1); and

processor means adapted to average the coherence measure for a plurality of the at least one transmitter actuations to determine a property of the formation (col. 7, lines 6[illegible] lines 1-2 and 35-37; col. 10, lines 43-50).

As to claim 2, Hsu discloses a system for sonic logging of an earth formation wherein the processor means adapted to process the acoustic signals to determine a coherence measure includes a slowness time coherence calculation (col. 8, lines 14-21 and 31-34).

Referring to claim 3, Hsu discloses a system for sonic logging of an earth formation wherein the processor means adapted to process the acoustic signals is further adapted to produce a coherence plot from the detected acoustic signals (figure 6).

As to claim 4, Hsu discloses a system for sonic logging of an earth formation wherein the processor means adapted to average the coherence measure is further adapted to produce an average coherence plot from the averaged coherence measure (figure 6).

Referring to claim 5, Hsu discloses a system for sonic logging of an earth formation wherein the logging instrument is adapted for disposal within the wellbore during the drilling of the wellbore (figure 1).

As to claim 6, Hsu discloses a system for sonic logging of an earth formation wherein the determined property is the slowness of the formation (col. 3, lines 25-29; col. 8, lines 14-21).

Referring to claim 7, Hsu discloses a system for sonic logging of an earth formation (Abstract), comprising:

a logging instrument adapted for disposal within a well-bore traversing the formation (col. 4, lines 53-56);

at least one acoustic transmitter 26/28 (figure 1) disposed on the logging instrument (col. 4, lines 56-58);

at least one receiver 32 (figure 1) adapted to detect acoustic signals disposed on the logging instrument (col. 4, lines 58-60);

processor means adapted to process acoustic signals without stacking the signals to determine a coherence measure from acoustic signals detected by the at least one receiver and associated with the at least one transmitter actuations (col. 8, lines 14-21); and

processor means adapted to average the coherence measure for a plurality of the at least one transmitter actuations to determine a property of the formation (col. 7, lines 65-68; col. 8, lines 1-2 and 35-37; col. 10, lines 43-50).

As to claim 8, Hsu discloses a system for sonic logging of an earth formation wherein the processor means adapted to process the acoustic signals to determine a coherence measure is adapted to calculate a slowness time coherence (col. 8, lines 14-21 and 31-34).

Referring to claim 9, Hsu discloses a system for sonic logging of an earth formation wherein the processor means adapted to process the acoustic signals is further adapted to produce a coherence plot from the detected acoustic signals (figure 6).

As to claim 10, Hsu discloses a system for sonic logging of an earth formation wherein the processor means adapted to average the coherence measure is further adapted to produce an average coherence plot from the averaged coherence measure (figure 6).

Referring to claim 11, Hsu discloses a system for sonic logging of an earth formation wherein the logging instrument is adapted for disposal within the wellbore during the drilling of the wellbore (figure 1).

As to claim 12, Hsu discloses a system for sonic logging of an earth formation wherein the determined property is the slowness of the formation (col. 3, lines 25-29; col. 8, lines 14-21).

Referring to claim 13, Hsu discloses a method for sonic logging of an earth formation (Abstract), comprising:

(a) repeatedly actuating an acoustic transmitter on a well logging instrument disposed in a wellbore traversing the formation (col. 3, lines 1-5);

(b) detecting acoustic signals with at least one receiver disposed on the instrument (col. 3, lines 5-24);

(c) determining a coherence measure from the detected acoustic signals associated with the at least one transmitter actuations (col. 3, lines 25-29; col. 8, lines 14-21); and

(d) averaging the coherence measure for a plurality of the transmitter actuations to determine a property of the formation (col. 7, lines 65-68; col. 8, lines 1-2 and 35-37; col. 10, lines 43-50).

As to claim 14, Hsu discloses a method for sonic logging of an earth formation wherein the determined property is the slowness of the formation (col. 3, lines 25-29; col. 8, lines 14-21).

Referring to claim 15, Hsu discloses a method for sonic logging of an earth formation wherein step (c) includes calculating a slowness time coherence (col. 8, lines 14-21 and 31-34).

As to claim 16, Hsu discloses a method for sonic logging of an earth formation wherein step (c) includes producing a coherence plot from the detected acoustic signals (figure 6).

Referring to claim 17, Hsu discloses a method for sonic logging of an earth formation wherein step (d) includes producing an average coherence plot from the averaged coherence measure (figure 6).

As to claim 18, Hsu discloses a method for sonic logging of an earth formation wherein the logging instrument is adapted for disposal within the wellbore during the drilling of the wellbore (figure 1).

Referring to claim 19, Hsu discloses a method for sonic logging of an earth formation (Abstract), comprising:

(a) repeatedly actuating an acoustic transmitter on a well logging instrument disposed in a wellbore traversing the formation (col. 3, lines 1-5);

(b) detecting acoustic signals with at least one receiver disposed on the instrument (col. 3, lines 5-24);

(c) determining a coherence measure from the detected acoustic signals associated with the at least one transmitter actuations without stacking the signals (col. 3, lines 25-29; col. 8, lines 14-21); and

(d) averaging the coherence measure for a plurality of the transmitter actuations to determine the slowness of the formation (col. 7, lines 65-68; col. 8, lines 1-2 and 35-37; col. 10, lines 43-50).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,748,329 to Mandal

U.S. Patent No. 6,654,688 to Brie et al.

U.S. Patent No. 6,477,112 to Tang et al.

U.S. Patent No. 6,459,993 to Valero et al.

U.S. Patent No. 4,698,793 to Wu

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan M Le whose telephone number is (571) 272-2276. The examiner can normally be reached on Monday through Friday from 9:00 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Toan le

November 23, 2004

MICHAEL NGHIEM
PRIMARY EXAMINER